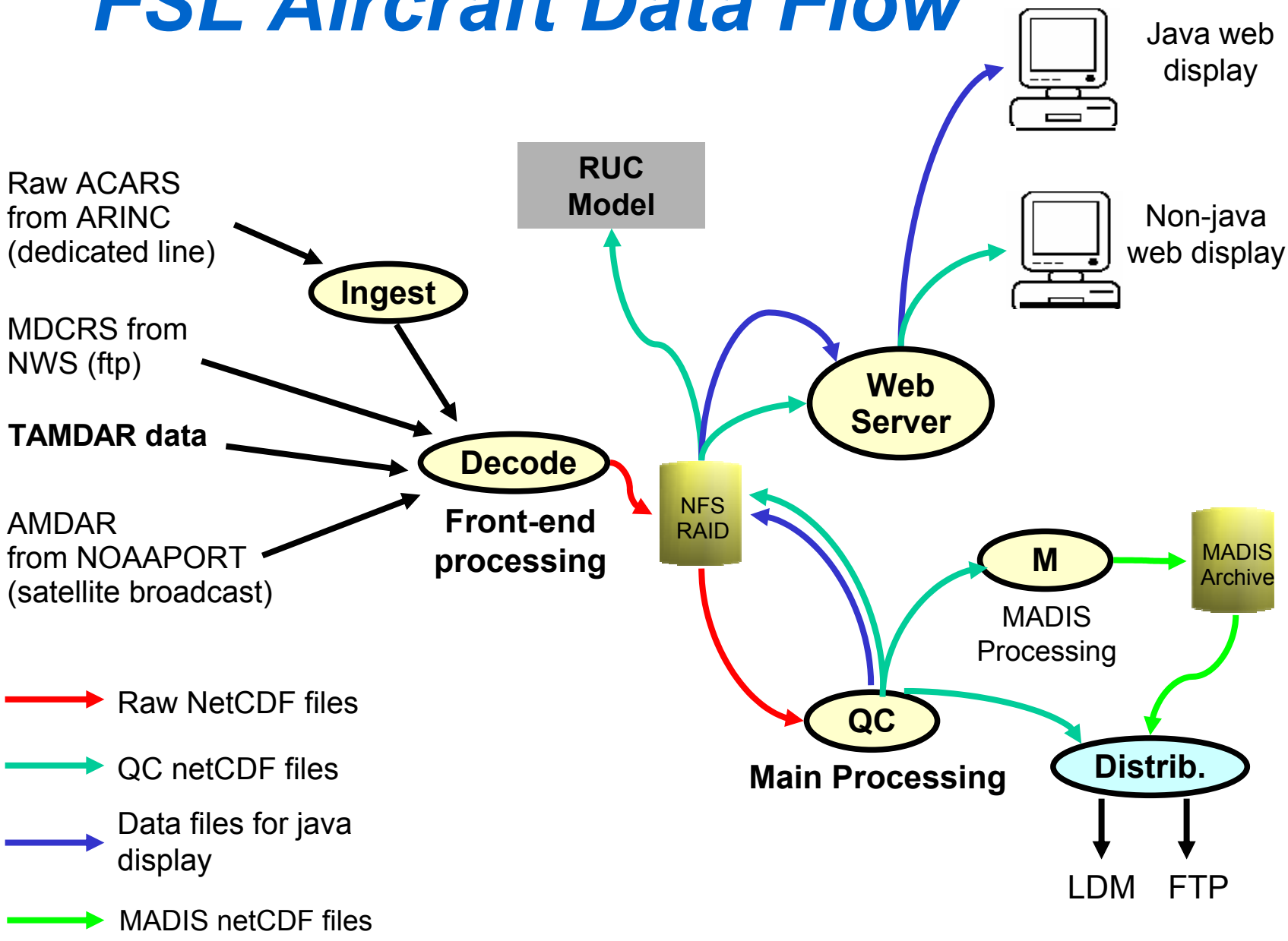
TAMDAR – data processing at FSL

- Data from AirDat to FSL
- will contain
  - winds aloft
  - temperature
  - relative humidity (2) – reported as dew point
  - eddy dissipation rate
  - icing (binary)
  - many quality control flags

FSL Aircraft Data Flow



Current status

- Data to be in BUFR format
- Exact format still in flux
- Data will contain a ‘expected RH accuracy’
- Real-time data expected to flow around to FSL around 1 August
- Quality control/reformatting software at FSL available a few weeks later

Current status (cont'd)

- When QC software is in production, MADIS data will automatically become available
- Data on FSL web site by 1 September

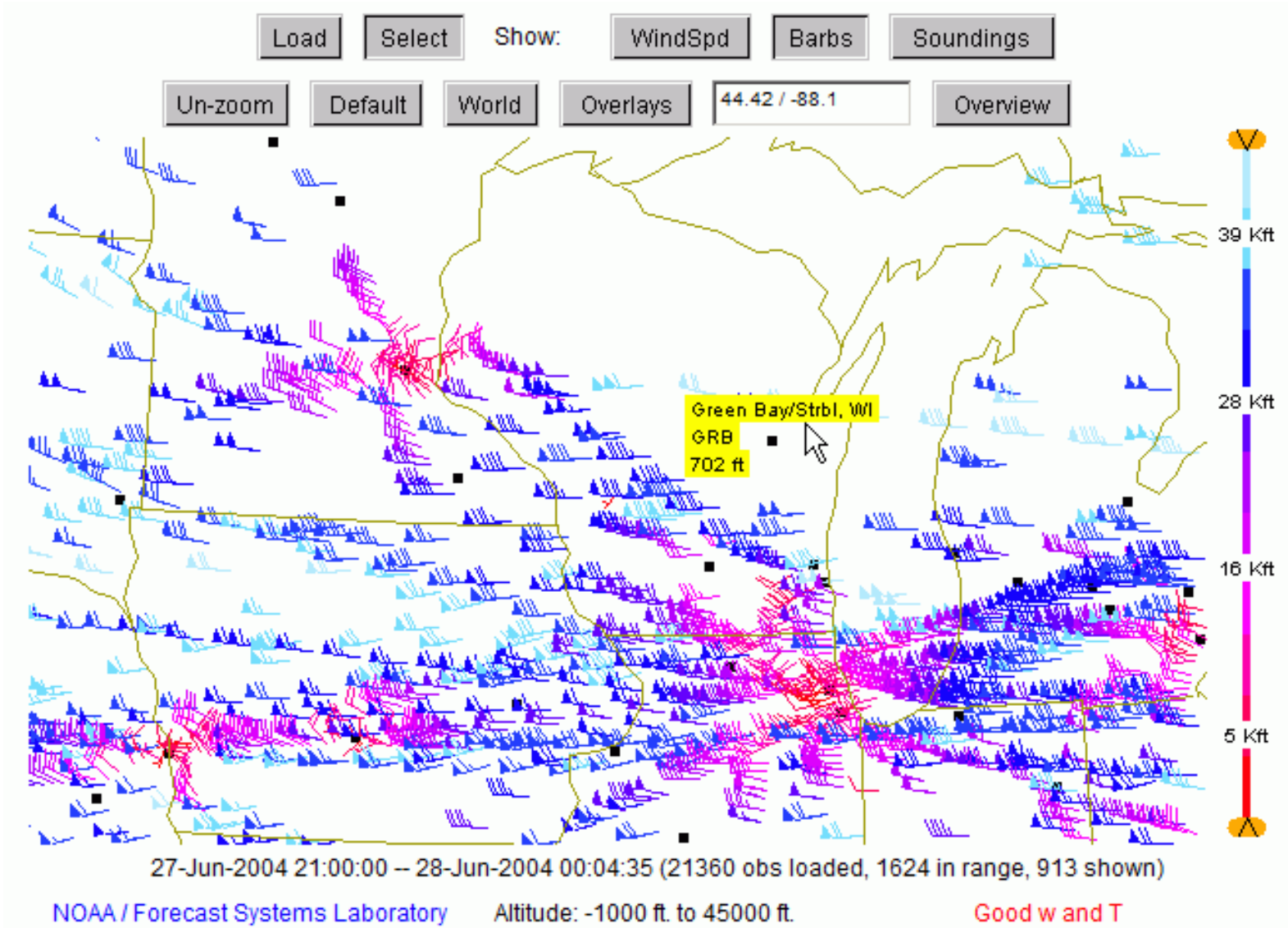
Current MADIS status

- Plan-view format files already available (but no TAMDAR data, of course)
- Soundings files are *now available*
  - (many have asked for this—thanks to NASA for funding this work)
- AWIPS display package *available for download from FSL to NWSFOs*
  - this display package includes icing and turbulence
- You are the first to hear
- Non-AWIPS software to read these files will be available after variables are defined

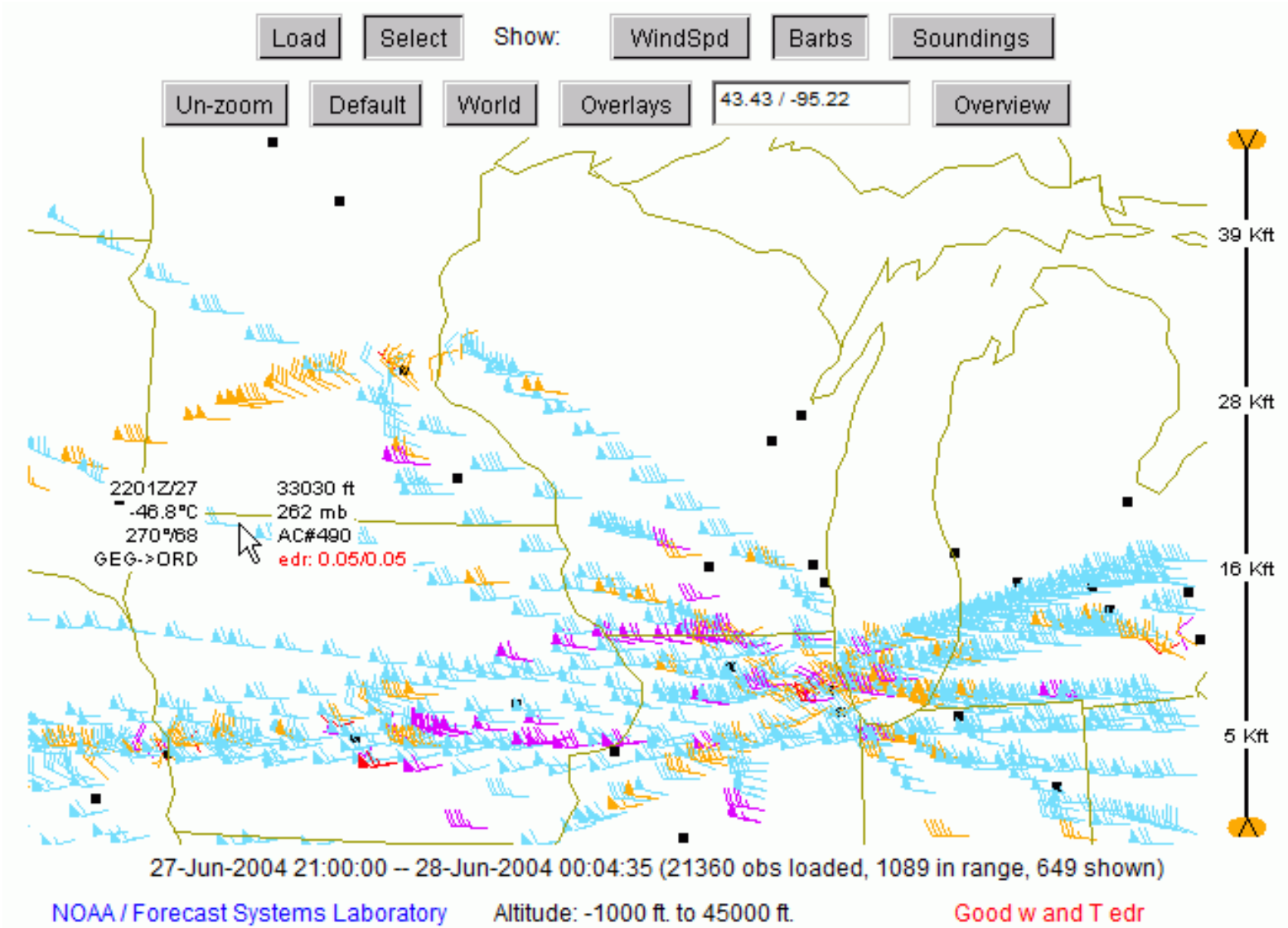
Web page plans

- Current status…

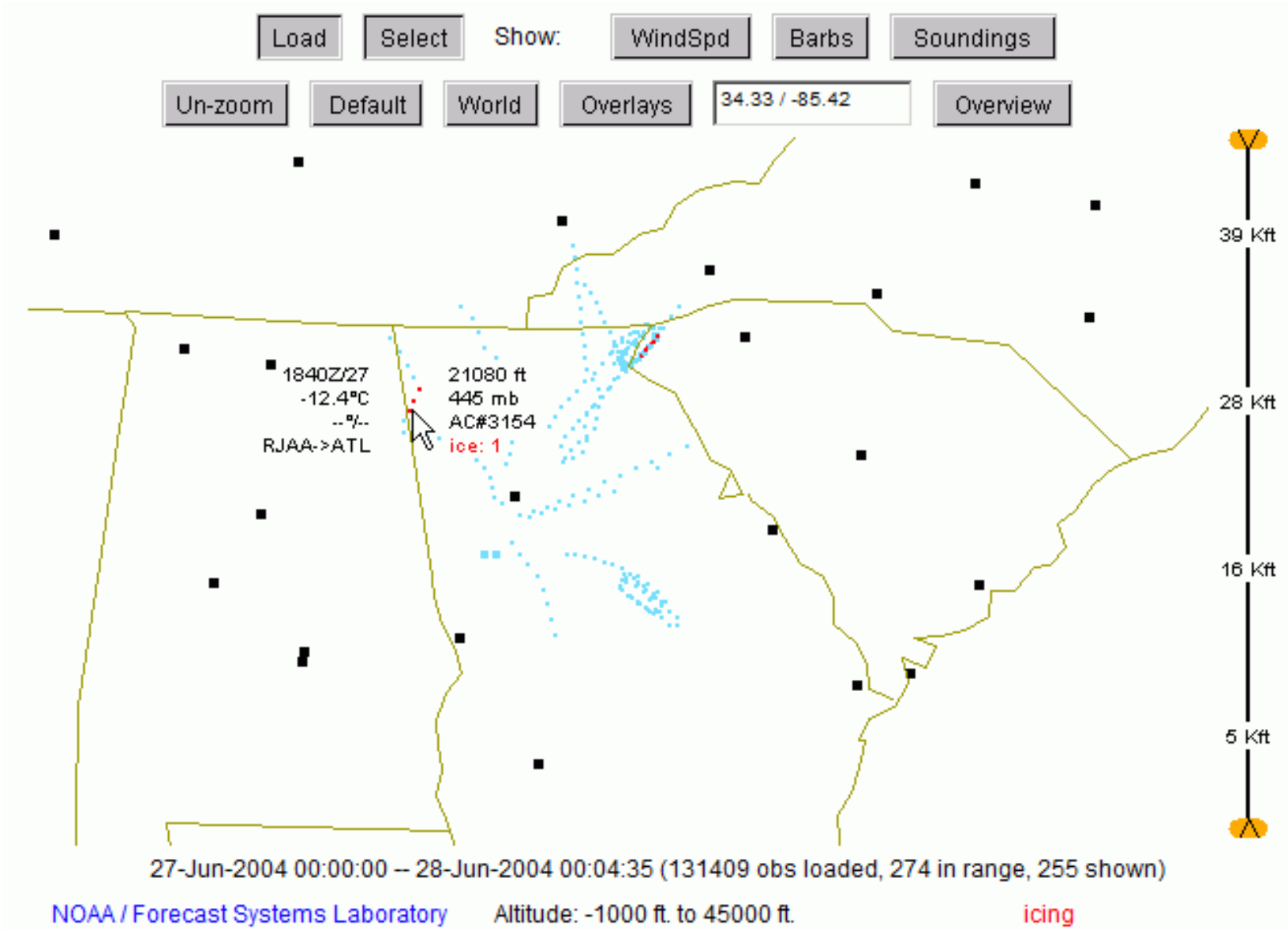
Upper mid-west coverage last Sunday night



EDR data (NCAR algorithm)



Icing data (from Delta airlines)



Web page plans (2)

- Will add ability to select TAMDAR data only
- Will add airports served by Mesaba turboprops
- Variables failing QC will be shown as ‘bad’
- Detailed QC information will not be shown (some of that data will be available from MADIS)

Outstanding questions

- What QC information will FSL pass into the MADIS files?
- What QC info will we show on the web page (must be very little)

Some variables we request input about:

variable	included in MADIS	included on web display
RH (avg)	yes	yes
RH (err)	yes	?
RH 1 and 2	?	no
time of EDR peak	?	?
separate wind speed and direction error	no	no

Questions?

TAMDAR in Forecast Models

- RUC at FSL
- AirDat plans -Mark
- Other models - anyone

Initial RUC/TAMDAR tasks

- Compare TAMDAR with RUC background fields to assess error characteristics
- Compare TAMDAR with
  - other aircraft
  - radiosondes
  - wind profilers
  - radars
  - surface observations

After ingest of TAMDAR into RUC

Once the full fleet is functioning:

- make parallel retrospective runs of
  - RUC-S ("standard" RUC)
  - RUC-T (with TAMDAR wind, T, and Dewpt.)
- For a total of 8 weeks
  - several periods covering different weather
- Generate and analyze skill statistics
  - verification by radiosondes and profilers

RUC-T, some details

- The RUC *with* TAMDAR will include humidity information, but not EDR and icing
- We will probably use a *fixed* humidity error (due to software limitations), but will consider the 'expected RH error' variable from AirDat

Real-time RUC with TAMDAR??

- In response to **strong** user wishes, we are *considering* running a real-time RUC with TAMDAR
- Computer resources are very limited
- If we're able to do this, the forecasts would not go out very far, and perhaps we wouldn't run every hour
  - what limited schedule of runs would most help users?

Other models with TAMDAR?

- AirDat plans – Mark
- Other models
  - LAPS at WFOs?
  - other ideas?
  - rumors??